Stantec Analytical Validation Checklist — Report No. ATE93

Project Name: Amtrak North Yard	Project Number: 213402048
Validator: Linda Goad	Laboratory: Eurofins/Lancaster Laboratory
Date Validated: 11/29/2018	Laboratory Project Number: 1813970
Sample Start-End Date: 6/15/2017	Laboratory Report Date: 7/12/2017

Parameters Validated:

Polychlorinated Biphenyls (PCBs) by EPA SW-846 3550B/8082 – soil matrix

Percent Solids by SM 2540 G-1997

Samples Validated:

G-5(0.0-0.3), LLI # 9051411
G-5(0.5-0.8), LLI # 9051412
G-5(1.0-1.3), LLI # 9051413
G-5(1.5-1.8), LLI # 9051414
G-5(2.0-2.3), LLI # 9051415
G-5(2.5-2.8), LLI # 9051416
G-5(3.0-3.3), LLI # 9051417
G-5(3.5-3.8), LLI # 9051418
G-5(4.0-4.3), LLI # 9051419
G-5(4.5-4.8), LLI # 9051420
B-5(4.5-4.8), LLI # 9051421
B-5(5.0-5.3), LLI # 9051422
B-5(5.5-5.8), LLI # 9051423
B-5(6.0-6.3), LLI # 9051424
B-5(6.5-6.8), LLI # 9051425
C-5(0.0-0.3), LLI # 9051426
C-5(0.5-0.8), LLI # 9051427
C-5(1.0-1.3), LLI # 9051428
C-5(1.5-1.8), LLI # 9051429
C-5(2.0-2.3), LLI # 9051430

VALIDATION CRITERIA CHECK

Validation Flags Applicable to this Review:

U The analyte was analyzed for, but not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ Result is estimated quantity but the result may be biased high.

J- Result is estimated quantity but the result may be biased low.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

B The analyte was detected in the method, field, and/or trip blank.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

	Yes	No
1. Were all the analyses requested for the samples submitted with each COC completed by the lab?	**X**	

Comments:			
2. Did the laboratory identify any non-conformances related to the analytical result?		Yes **X**	No
Comments: The laboratory noted that the surrogate decachlorobiphenyl exceeded the acceptance window in sample G-5(1.5-1.8).			
3. Were sample Chain-of-Custody forms complete?		Yes X	No
Comments:			
4. Were samples received in good condition and at the appropriate temperature?		Yes **X**	No
Comments: Based on the laboratory sample receipt form, the samples were received by the laboratory without custody seals.			
5. Were sample holding times met?		Yes **X**	No
Comments:			
6. Were correct concentration units reported?		Yes **X**	No
Comments:			
7. Were detections found in laboratory blank samples?		Yes	No **X**
Comments:			
8. Were detections found in field blank, equipment rinse blank, and/or trip blank samples?	NA **X**	Yes	No
Comments: No field blanks were submitted with this sample delivery group.			
9. Were instrument calibrations within method criteria?	NA **X**	Yes	No
Comments: Not Applicable, Level II data validation.			
10. Were surrogate recoveries within control limits?		Yes	No **X**

Comments: PCBs: Recovery of the surrogate decachlorobiphenyl (DCB) was greater than the Delaware Department of Natural Resources (DNREC) Standard Operating Procedures for Chemical Analytical Programs Under the Hazardous Substances Cleanup Act (SOPCAP, Feb. 26, 2015) control limits in sample G-5(1.5-1.8) (216%). Detected results for PCBs in this sample were not qualified because the sample was diluted 200X prior to analysis. The surrogate recovery does not provide meaningful information.			
11. Were laboratory control sample(s) (LCS/LCSD) sample recoveries within control limits?		Yes **X**	No
Comments:			
12. Were matrix spike (MS/MSD) recoveries within control limits?	NA	Yes **X**	No
Comments: The sample B-5(5.5-5.8) was analyzed as the site-specific MS/MSD for PCBs.			
13. Were RPDs within control limits?		Yes **X**	No
Comments:			
14. Were dilutions required on any samples?		Yes **X**	No
Comments: PCBs: Ten soil samples required dilution prior to analysis, with dilution factors ranging from 5X to 200X. Sample reporting limits were adjusted accordingly. No data were qualified.			
15. Were Tentatively Identified Compounds (TIC) present?	NA **X**	Yes	No
Comments: TIC not requested.			
16. Were organic system performance criteria met?	NA **X**	Yes	No
Comments: Not Applicable, Level II data validation.			
17. Were GC/MS internal standards within method criteria?	NA **X**	Yes	No
Comments: Not Applicable, Level II data validation.			
18. Were inorganic system performance criteria met?	NA **X**	Yes	No
Comments:			
19. Were blind field duplicates collected? If so, discuss the precision (RPD) of the results.		Yes	No **X**

Comments: No blind field duplicates were submitted with this SDG. The lack of a field duplicate did not affect data quality, usability, or completeness. Completeness with regard to collection of the required number of field duplicates will be assessed on an overall program-wide basis.			
20. Were at least 10 percent of the hard copy results compared to the Electronic Data Deliverable Results?	Yes **X**	No	Initials KEF
Comments:			
21. Other?		Yes	No **X**
Comments:			

PRECISION, ACCURACY, METHOD COMPLIANCE AND COMPLETENESS ASSESSMENT

Precision:	Acceptable X	Unacceptable	Initials LEG
Comments:			
Sensitivity:	Acceptable X	Unacceptable	Initials LEG
Comments:			
Accuracy:	Acceptable X	Unacceptable	Initials LEG
Comments:			
Representativeness:	Acceptable X	Unacceptable	Initials LEG
Comments:			
Method Compliance:	Acceptable X	Unacceptable	Initials LEG
Comments:			
Completeness:	Acceptable X	Unacceptable	Initials LEG
Comments:			